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Tagging Mule Deer Fawns in South-Central Washington, 1969-1974[1]

Abstract

Two hundred sixty-two mule deer fawns were tagged along the Hanford Reservation reaches of the Columbia River from 1969 to 1974. Twenty tags were returned through 1974. Four tagged animals, all bucks, were killed more than 20 miles from their place of tagging, and one of them was killed 70 miles away. Without tagging of fawns, dispersals would have been undetected.

Introduction

Mule deer, *Odocoileus hemionus hemionus,* are widely distributed throughout southeastern Washington with major populations located in the Blue Mountains and along the breaks of the Snake River and its tributary streams. Rough, steep topography is usually associated with mule deer habitat. The Hanford Reservation in south-central Washington supports a sizeable mule deer herd that has benefited from protection against human intrusions. This protection is provided by security procedures in force for more than 25 years, rather than by topographic inaccessibility. There are probably many more mule deer present on the Hanford Reservation today than there were before its establishment in 1943. Although extensive deer censuses have not been conducted, the population appears to be relatively stable. The purpose of this study was to tag mule deer fawns and to rely on tag returns by hunters to determine if mule deer were indeed dispersing from the reservation into the surrounding areas.

Study Site

This study was conducted on the islands and shoreline associated with that section of the Columbia River which flows for 48 miles through the U.S. Atomic Energy Commission's Hanford Reservation in south-central Washington. This section of the river is not impounded and lies upstream from the pool formed by McNary Dam and downstream from Priest Rapids Dam (Fig. 1).

Vegetation of the surrounding area is mostly undeveloped rangeland dominated by big sagebrush, *Artemisia tridentata* (Daubenmire, 1970). The islands and the riparian strip support scattered stands of lupine, *Lupinus* spp.; buckwheat, *Eriogonum compositum;* absinthe, *Artemisia absinthium;* and ryegrass, *Elymus cinereus.* Shrub cover is sparse but does include occasional thickets of willows, *Salix* spp.; mulberry, *Morus rubra;* and currant, *Ribes cereum* (Hanson and Eberhardt, 1971).

Since little surface water can be found in the surrounding area, mule deer populations tend to remain relatively close to the river during most of the year.

The section of river flowing through the Hanford Reservation was closed to public

[1] Research conducted for the U.S. Atomic Energy Commission under Contract AT(45-1)-1830.

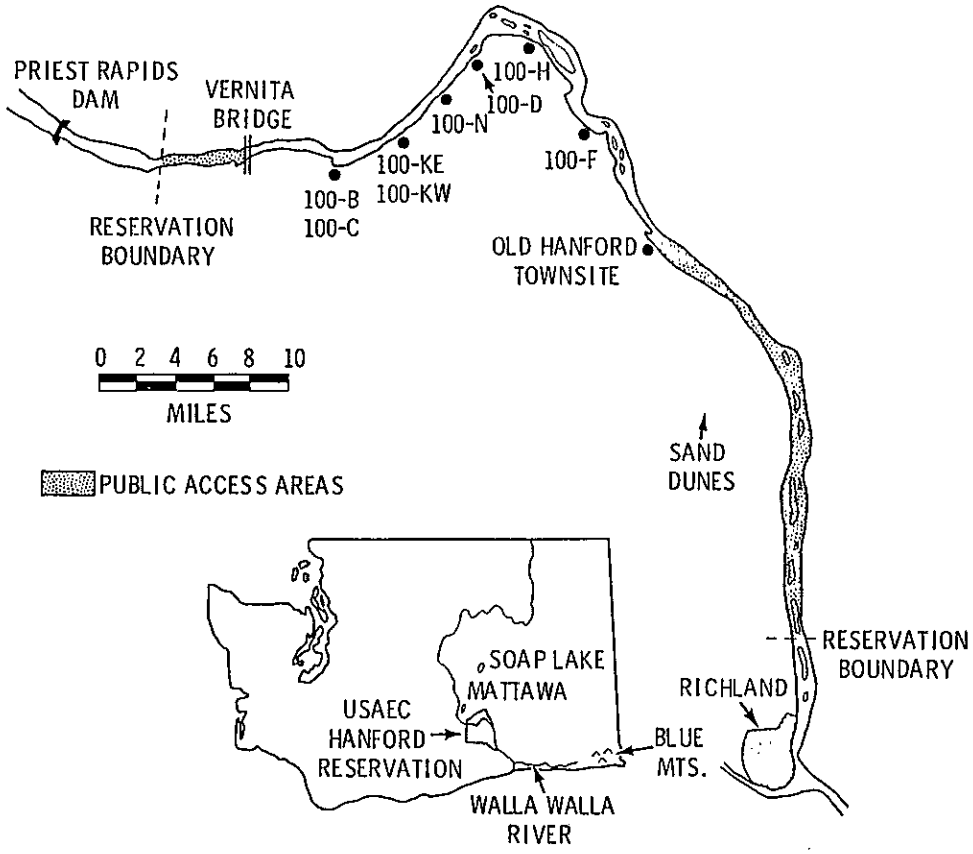

Figure 1. Map of study area and general location within the State of Washington.

use from 1943 to 1971. Since 1971, however, public access has been allowed as far upstream as the old Hanford townsite, 23 miles from Richland, Washington.

Methods Employed in Tagging

A helicopter was used to locate fawns, or does which were suspected of having a fawn nearby. When a fawn was sighted, the tagging crew (usually two people) disembarked and the pilot pursued the fawn alone. If a fawn elected to hide, the helicopter hovered overhead, keeping the fawn's attention, thus allowing the tagging crew to approach close enough for hand-capture. On occasion, some fawns panicked and refused to hide. These were either pursued on foot or driven into the river, where they were taken from the water by personnel in a small boat.

All animals were individually marked with two tags—one furnished by the Washington State Game Department, the other, a large cattle-type tag with 1¼-in. numbers, which can be read at a distance with a spotting scope, for field identification (Fig. 2).

Results

Six consecutive years of tagging results are shown in Table 1. June 1969, the first

Figure 2. A captured fawn which has been fitted with ear tags.

session of intensive tagging, had limited success for the three-day effort, since the tagging crew and the helicopter pilot were inexperienced in the pursuit and capture of fawns. Twenty-four fawns were captured. The next four years—1970, 1971, 1972, and 1973—yielded 51, 52, 53, and 48 fawns, respectively. Only 34 fawns were tagged in 1974 when the entire operation was hampered by hot weather and the dense vegetation brought on by an unusually moist spring.

The response of deer to human intrusion is demonstrated in the tagging results.

TABLE 1. Numbers of mule deer fawns captured and tagged on the Hanford Reservation, 1969-1974.

	1969	1970	1971	1972	1973	1974
Males	13	32	29	31	22	17
Females	11	19	23	22	26	16
TOTAL	24	51	52	53	48	34[1]

[1] One fawn was released before sex was determined.

As restrictions for use of the Columbia River are lifted, fewer fawns are being captured on islands accessible to the boating public, and more are being taken from the restricted-access shoreline areas.

Tag Returns

Tag return information was received mostly through cooperation with the Washington State Game Department. Hunter check stations were the major source of tag returns. Twenty tags from the total of 262 were returned through the fall of 1974; 16 were from hunters, 3 from road-killed animals, and 1 from a dead animal found in an irrigation ditch.

Twelve of 16 tags returned by hunters were from kills near the Columbia River opposite the Hanford Reservation during the annual fall hunting season. An arbitrary ten-mi radius from the tagging point was chosen to distinguish local movements from dispersals.

Four tag returns were from bucks considered out of their home range. One was killed near Mattawa, 25 miles upstream, and another near the confluence of the Columbia and Walla Walla rivers, 50 miles downstream. Movement along the river is to be expected, because of the accessibility of water and vegetative cover. The remaining two returns, however, were from animals which had moved away from the river. One was killed in a farming area 20 miles west of the animal's tagging location, and another made the longest movement to date, a distance of about 70 miles, and was killed north of Soap Lake. Three of the four were killed as yearlings and the other at 2½ years of age. Robinette (1966) indicated that many mule deer bucks do not leave the company of their mothers until their second summer.

Since the Hanford mule deer do not make gross population shifts seasonally, the distances traveled by deer dispersing to the surrounding areas are far greater than expected and would have gone completely undetected if the deer had not been marked as fawns.

Radioactivity in Hanford Deer

Mule deer traveling out of the Hanford Reservation have a certain potential to serve as a pathway for movement of radioactive material from waste management areas to man. The levels of Cesium-137 observed in deer meat from animals killed on the Hanford Reservation during the past few years averaged 0.1 pCi/g wet weight (Bramson *et al.*, 1973). Similar values are reported by Whicker (1973) for deer collected in the mountains of Colorado, far removed from atomic energy facilities. This suggests that the Cesium-137 observed in Hanford deer flesh is primarily from worldwide fallout rather than from a contaminant source on the reservation itself.

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